YERINGTON – BACKFLOW AND CROSS-CONNECTION POLICY 2021

This Policy is applicable to the following water systems:

Yerington
Mason
Sunset Hills
Crystal Clear

Adopted August ___, 2021

Contents

SECTION 1 PURPOSE and RESPONSIBILITY

PURPOSE

The purpose of the City of Yerington's ("CITY") Backflow Prevention Program is:

1. To protect CITY's potable distribution system against the possibility of contamination or pollution from the customer's private internal water system.
2. To develop and implement an effective, ongoing, consistent backflow prevention program which will comply with Nevada Administrative Codes (NAC) 445A.67185 through NAC 445A.67255, Public Water Systems.
3. To educate customers about health (contamination) and non-health (pollution) hazards associated with their use of water to promote the elimination of actual and potential cross-connections.

CITY OF YERINGTON RESPONSIBILITY

CITY's responsibilities as a purveyor of drinking water include developing, implementing and maintaining a backflow prevention program consisting of service protection at the point where customer services connect to the distribution system. The CITY's Public Works Department ("PWD") is responsible to oversee, implement and enforce this Policy.

1. PWD will review all new service connection requests and all existing service connections to determine when a service connection presents an actual or potential hazard to CITY's water distribution system.
2. For the purposes of providing service protection for new or existing water services, CITY will designate the required type of backflow prevention to comply with NAC 445A and this Policy.
3. CITY will designate the installation location for backflow prevention assemblies.
4. CITY will provide backflow prevention installation standards to the customer or his/her representative.
5. CITY will require the customer to install the designated backflow prevention, by and at the customer's expense, within a length of time determined by CITY, as a requirement for water service.
6. CITY will not authorize water service turn on until backflow prevention has been satisfactorily installed, inspected by a CITY operator and has been tested by a certified tester.
7. CITY will terminate an existing water service if, after a reasonable attempt, compliance with this policy is not achieved. A satisfactory compliance includes installation which has been inspected and approved by CITY and has been successfully tested by a certified backflow tester.
8. CITY will notify customers of testing requirements and test due dates.
9. CITY will maintain records and monitor that backflow prevention is properly installed, maintained and tested.
10. CITY will periodically reevaluate service connections to assess the degree of hazard posed by the water customer's premise. This will be done by a CITY operator whenever there is a change in ownership at a premise or if CITY determines reevaluation to be necessary.
11. CITY will define enforcement actions for any customers that fail to comply with this Policy.
12. CITY is not responsible for detecting, eliminating or controlling cross-connections within a customer's water system.

CUSTOMER RESPONSIBILITY

Customers have very clear responsibilities for backflow prevention and cross-connection control. The following measures ensure the quality of the community's water supply as well as ensuring water quality within internal plumbing.

1. Customers have ownership, or custody, of potable water once it passes the point of connection to CITY's distribution system. Furthermore, customers have the primary responsibility to maintain their internal water piping to ensure that "used water" shall not reverse back into CITY's distribution system.
2. All costs associated with backflow prevention shall be borne by the water customer.
3. It is the water customer's responsibility to design backflow prevention to meet all CITY requirements and to conform with other applicable codes, such as the Uniform Plumbing Code (UPC), the National Fire Protection Association (NFPA) and all City or building codes. Customers have a responsibility to design, build and maintain their internal private water system per all applicable codes.
4. The customer shall design its water system (either a new water service or the retrofit of an existing water service) to accommodate pressure losses attributed to the installation of backflow prevention assemblies. This may include, but is not limited to, installing pumps or renovating existing private water systems with thermal expansion tanks.
5. Upon notification from CITY, the customer shall install, repair, replace or test the backflow prevention assembly within a length of time determined by CITY.
6. When it is not practical for the backflow prevention assembly to be installed immediately after the point of connection, the customer shall provide annually in writing to CITY a declaration that no connections exist, or will be made, between the point of connection and the backflow prevention assembly.
7. The customer shall make all installations and repairs to ensure that the assembly remains in factory working condition.
8. The customer shall have the assembly tested per the requirements in this Policy.
9. The customer is responsible for any loss or damage resulting from the installation, repair, maintenance, operation, malfunction or vandalism of a backflow prevention assembly.
10. Customers are responsible to notify CITY immediately of any possible hazards, pollutants or contaminants which may have entered CITY's distribution system from the customer's internal system.
11. If service protection does not exist or has been installed internal to a customer's system, the customer's system shall be available at all reasonable times for inspection by CITY to determine the existence of unprotected cross-connections.
12. Customers shall notify CITY of the intent to use non-potable water on the same premise where CITY water is being delivered.
13. If non-potable water is being used on the customer's premise, the customer's water system shall be available at all reasonable times for a shutdown inspection and test by CITY to determine the existence of cross-connections.

SECTION 2 DEFINITIONS

The following terms are relevant to CITY's backflow prevention and cross-connection control program. Any term not specifically defined in this section shall revert to the meaning as defined by the Nevada Administrative Code (NAC) 445A – Public Water Systems – and subsequent revisions thereof.

AIR GAP SEPARATION: A physical break between the free-flowing end of the supply pipe and the overflow rim of a receiving vessel. The air-gap shall be at least double the diameter of the supply pipe measured vertically above the top rim of the vessel, in no case less than one inch. In certain proximity to walls, the Air Gap Separation shall be three times the diameter of the supply pipe.

APPROVED BACKFLOW PREVENTION ASSEMBLY/BACKFLOW ASSEMBLY or DEVICE: A device or device assembly which has passed laboratory and field evaluation tests performed by the University of Southern California (USC) Foundation for Cross-Connection Control and Hydraulic Research.

ATMOSPHERIC VACUUM BREAKER (AVB): A vacuum breaker that contains an air inlet valve, a check seat and one or more air inlet ports, in which: 1) The flow of water causes the air inlet valve to close the air inlet ports, and 2) When the flow of water stops: (a) the air inlet valve falls and forms a check valve against backsiphonage and (b) the air inlet ports open to allow air to enter and satisfy the vacuum.

AUXILIARY WATER SUPPLY: Any water supply on or available to the premise other than the approved water supply.

AWWA STANDARD: An official standard developed by the American Water Works Association (AWWA).

BACKFLOW: An undesirable flow condition, caused by a differential in pressure, which causes the flow of water or other substances into the distribution system of a potable supply of water from any source or sources other than an approved water supply source.

PUBLIC WORKS DEPARTMENT: The personnel charged with administration of CITY's Backflow Prevention Program.

CERTIFIED SPECIALIST: An individual who is certified to perform cross-connection control and backflow prevention surveys. Certification shall be obtained through the CA-NV AWWA. Cross-Connection Control Specialist is synonymous with Certified Specialist.

CERTIFIED TESTER: An individual who is certified by the CA-NV AWWA, to perform tests on backflow prevention assemblies in Lyon County, Nevada.

CROSS-CONNECTION: Any unprotected actual or potential connection between a potable water system and any source or system containing water or a substance that is not or cannot be approved as safe and potable. By-pass arrangements, jumper connections, removable sections, swivel or changeover assemblies, or other assemblies through which backflow could occur, shall be considered cross-connections.

DIRECT CROSS-CONNECTION: A cross-connection which is subject to both backsiphonage and backpressure.

DOUBLE CHECK VALVE ASSEMBLY (DC): An assembly of two internally loaded, independently acting check valves, including tightly closing, resilient seated shut-off valves on each end of the assembly and four properly located resilient seated test cocks.

DOUBLE CHECK DETECTOR ASSEMBLY (DCDA): A Double Check Valve with a smaller sized approved bypass containing a specific water meter and an approved double check valve assembly.

HEALTH AGENCY: The Nevada Department of Environmental Protection, Bureau of Safe Drinking Water.

INDIRECT CROSS-CONNECTION: A cross-connection which is subject to backsiphonage only.

INTERNAL BACKFLOW PREVENTION OR INTERNAL BACKFLOW PROTECTION: Backflow prevention used for the purpose of isolation on a piece of equipment or use of water within a water customer's private plumbing system.

NON-POTABLE WATER: A water supply which has not been approved for human consumption.

POLLUTION: A degradation of the quality of water by any foreign substance which would not constitute a health hazard to the public health, but which would adversely and unreasonably affect the aesthetic qualities of water for domestic uses.

PRESSURE VACUUM BREAKER (PVB): An assembly containing an independently operating internally loaded check valve and an independently operating, loaded air inlet valve located on the discharge side of the check valve. The assembly is to be equipped with properly located resilient seated test cocks and tightly closing, resilient seated shut-off valves at each end of the assembly. This assembly is designed to protect against non-health or health hazards under a backsiphonage condition only. Approved for residential services separating the irrigation from the domestic irrigation. *NOT TO BE USED IN NEW CONSTRUCTION/NEW SERVICES FOR COMMERCIAL, IRRIGATION, OR FIRE.*

PREMISE(S): Any and all areas on a water customer's property which are served or have the potential to be served by CITY's water system.

REDUCED PRESSURE PRINCIPLE ASSEMBLY (RP): An assembly incorporating two internally loaded, independently operating check valves and an automatically operating differential pressure relief valve located between the two checks, with resilient seated shut-off valves on each end of the assembly, and equipped with four properly located, resilient seated test cocks.

REDUCED PRESSURE PRINCIPLE DETECTOR ASSEMBLY: A reduced pressure principle assembly with a smaller sized approved bypass containing a specific water meter and an approved reduced pressure principle assembly.

TEST: A functional test of a USC approved backflow prevention assembly. This test shall be conducted by a CA-NV AWWA Certified Backflow Prevention Tester, per procedures adopted by AWWA.

TESTING MONTH: The month that the testing data is due, which is determined by previous years' data or by the CITY's Public Works Department.

THERMAL EXPANSION: The increase in water pressure within a customer's water system due to thermal affects. Thermal expansion is a potential problem within a customer's system which has been equipped with a backflow prevention assembly. Appropriate measures shall be taken by the customer, i.e., properly designed and sized thermal expansion tanks.

USED WATER: Water which has passed the point of connection and therefore has left the control of CITY.

SECTION 3 GENERAL BACKFLOW PREVENTION REQUIREMENTS

CURRENT INSTALLATION REQUIREMENTS

Backflow prevention assemblies are required by CITY on all commercial services including commercial irrigation to provide service protection for CITY's distribution system. This backflow prevention shall be installed per CITY's Backflow Prevention Installation Requirements and Standards and this policy as a condition for new water service or continuation of existing service. Any proposed deviation from these requirements and standards will require approval from CITY.

CITY's Backflow Prevention Installation Requirements and Standards may change over time. It is the responsibility of the customer to ensure compliance with the current version of these standards and this policy. These requirements refer to both new and existing water services, and for domestic, irrigation and fire services, unless specified otherwise by CITY.

DESIGN CONSIDERATIONS

Of particular importance in the design of a system incorporating a backflow prevention assembly are provisions:

1. For thermal expansion of downstream water or fluids
2. For drainage systems to handle full port discharges from the relief valves of reduced pressure principle backflow prevention assemblies
3. To prevent freezing of the backflow prevention assembly and the water service
4. To prevent submergence of internally or externally installed backflow prevention assemblies
5. To accommodate additional pressure losses that will occur through the backflow assembly

APPROVED ASSEMBLIES

Pursuant to NAC 445A, any backflow prevention assembly installed for service protection on CITY water services shall be on the current University of Southern California (USC) List of Approved Backflow Prevention Assemblies.

Backflow prevention assemblies are approved by USC as an integral unit beginning with the #1 shut-off valve, through the assembly body and through the #2 shut-off valve. Any modification, including use of spare parts other than those of the original manufacturer or using a non-USC-approved shut-off valve, invalidates the USC approval, thus, invalidates the approval of CITY as an acceptable assembly.

TYPES AND METHODS OF BACKFLOW PREVENTION

Types and methods of backflow prevention that are acceptable to CITY for providing service protection include the following:

1. Pressure Vacuum Breaker or Spill Prevention Pressure Vacuum Breaker - only for Single Family Residential use to separate the domestic yard line from the irrigation line
2. Double Check Valve Assembly and Double Check Valve Detector Assembly
3. Reduced Pressure Principle Assembly and Reduced Pressure Principle Detector Assembly
4. Air Gap Separation

CITY shall specify the required type of protection based on NAC 445A and CITY's policies, and to be commensurate with the assessed degree of hazard on the customer's premise. In situations that are not covered in NAC 445A, CITY shall evaluate each situation on a case-by-case basis and will determine the required type of backflow prevention. The customer may at his/her discretion choose a higher level of protection than the minimum required by CITY.

Per NAC 445A.6721, CITY reserves the right to require more stringent requirements than that set forth in NAC 445A.

DOMESTIC, IRRIGATION

DC, RP or Air Gap, as determined by CITY.

FIRE

1. Dry systems also require double check valve assemblies due to the potential of contamination when non-potable water is introduced through the fire pumper connection.
2. NFPA Class 1, 2 and 3 systems require the installation of an approved double check valve assembly.
3. NFPA Class 4, 5 or 6 systems require the installation of an approved reduced pressure principal assembly.
4. At its discretion CITY may require detector check assemblies.

SPECIAL CIRCUMSTANCES

The normal types of backflow prevention required for a water service are listed above. However, a retrofit situation or any special circumstances listed below (or not listed) may require an exception.

1. Where access to a premise is denied by the customer, CITY's distribution system shall be protected with an Air Gap.
2. Where there is one contaminant (health) hazard, CITY's distribution system shall be protected with a Reduced Pressure Principle Assembly, to be determined by CITY.
3. If it is impossible or impractical to make a cross-connection survey, CITY's distribution system shall be protected with an Air Gap Separation or a Reduced Pressure Principle Assembly, to be determined by CITY.

ATMOSPHERIC VACUUM BREAKER (AVB)

The use of atmospheric vacuum breakers for service protection is prohibited.

INSPECTIONS

All inspections shall be performed by CITY unless otherwise assigned by mutual agreement. All backflow prevention assemblies will be inspected by CITY as a condition for new water service or continuation of existing service.

If an inspection is not performed, CITY may require the service trench be excavated and/or the backflow prevention assembly moved to the meter or the point of connection.

BACKFLOW PREVENTION ASSEMBLY TESTS

The customer shall have each installed assembly tested by a certified tester as a condition for new water service or continuation of existing service. The customer shall submit a copy of the report to CITY.

1. After installation of a new assembly
2. After repair, replacement, or relocation of an assembly
3. After a backflow incident
4. Annually; or more frequently as required by CITY for the purpose of monitoring cross-connection hazards; or more frequently for the purpose of reviewing assemblies that repeatedly fail the tests.

Water service will be terminated if tests are not performed as required by CITY.

INITIAL TESTS

Each newly installed backflow prevention assembly installed on a new domestic or irrigation service will have the initial test completed by a certified backflow tester. It is the responsibility of the owner or owner's representative to have the assembly re-tested if the initial test fails.

The successful test results are required by CITY within seven (7) days of the initial failed test. If a CITY operator has inspected the premises and determined that there is not an immediate potential for risk, passing results will be due within fourteen (14) days of the failed test report.

Any newly installed backflow assembly on a fire service or a backflow prevention assembly which has been repaired, replaced or relocated, shall be tested and the successful test results shall be received by CITY within seven (7) days of the water meter turn on or repair of the assembly. If the passing test is not successfully completed in this period, the procedure to terminate water service, will be instituted. Extensions will only be granted for good cause.

ANNUAL TESTS - NOTIFICATION SCHEDULE

CITY will notify customers by mail when the periodic (usually annual) testing of the assembly providing service protection is required. CITY may require certain assemblies be tested more frequently and will notify the customer of this requirement.

REPAIR OR REPLACEMENT OF ASSEMBLIES

An assembly may be removed by the customer for repair or replacement provided the unprotected water service is not used until the work is completed. A re-test of the repaired assembly is required.

All assemblies used as replacements shall be installed per CITY's Backflow Prevention Installation Requirements and Standards and this policy and shall be tested by a certified tester after installation.

INSTALLATION LOCATION

The location of backflow prevention for service protection shall be designated by CITY.

SPECIAL CIRCUMSTANCES

The backflow prevention assembly for all water services to a premise shall be installed at the meter or point of connection to CITY's main if any of the following apply:

1. An auxiliary water supply or non-potable water supply (recycled, ditch, well, surface, etc.) is on the premises.
2. Entry to any portion of the premises is not available for inspection by CITY.
3. The customer cannot or will not allow an on premise inspection of his private internal water system.
4. All conditions for an internal installation as noted in the CITY Backflow Prevention Installation Requirements and Standards or this policy are not met, including approval by CITY for an internal installation.

DOMESTIC, IRRIGATION

Domestic and irrigation services shall have the backflow assembly located downstream of the meter.

FIRE SERVICES

Fire Services Definitions.

The following definition system is used by CITY for determining the appropriate installation location for backflow prevention on a private fire protection system for new or existing services. It is not to be confused with the NFPA fire system classification system.

1. **Type A System** - Single Fire Service exhibits all of the following characteristics:
   a. A single fire service line (one point of connection to CITY's main) that serves one fire suppression system in one building with one riser, and
   b. the fire suppression system is not directly or indirectly connected to any other fire suppression system, and
   c. is not a looped system, and
   d. has no fire hydrants on the fire service line.
2. **Type B System** - defined as any configuration of fire service not designated as Type A system. Type B systems may include, but are not limited to, the following characteristics:
   a. Multiple points of connection to CITY's main.
   b. Looped systems with one point of connection.
   c. One fire service line provides water suppression to more than one building.
   d. Fire hydrants are on the fire service line.
   e. Private fire hydrants with a lateral greater than fifty (50) feet in length

SECTION 4 RETROFIT PROCEDURE FOR EXISTING SERVICE CONNECTIONS

CITY shall review all existing water service connections to assess the degree of hazard within a premise to designate the required backflow prevention. All existing domestic, irrigation and fire service connections will be reviewed. The retrofit program will be carried out:

1. Through mailings to specific customers,
2. During remodels, tenant improvements, expansions, or construction projects; or
3. Through other methods deemed necessary by CITY.

REMODELS, TENANT IMPROVEMENTS, OTHER CONSTRUCTION

Retrofits which are initiated in conjunction with a building permit for remodels, tenant improvements, building additions, etc., may not require the detailed survey discussed below. CITY will review the construction project and water use and will determine the appropriate type of backflow assembly and location. These retrofits shall be completed during the course of the construction project and are required for continuing water service.

RETROFIT STEPS

After it has been determined which step above will be followed, the following is a brief description of the next steps in the retrofit.

1. The type of backflow prevention for service protection and its location will be determined by CITY. The level of protection listed in NAC 445A will be the minimum requirement for service protection. Any water use not listed in this detail will be reviewed on a case-by-case basis for service protection requirements.
2. CITY recognizes the hardships that may be imposed on a customer through this retrofit program. Therefore, the schedule for implementation of the backflow prevention improvements may be flexible, provided CITY determines there is no immediate risk. CITY will determine completion date after consultation with the customer. General time frames for completion of installation follow:
   a. Where CITY identifies a potential contaminant (health) hazard, service protection shall be completed within 30 days.
   b. Where CITY identifies a pollutant (non-health) hazard, service protection shall be completed within 60 days.
3. After the final determination is made, a letter will be mailed to the customer describing in detail the improvements to be made and a schedule by which the improvements shall be completed.
4. If the retrofit is not completed within the time allowed, the procedure to terminate water service, based on Section 9, ENFORCEMENT ACTION, BASIS FOR WATER SERVICE TERMINATION, Item 3 will be instituted. If the customer is experiencing genuine extenuating circumstances a request may be made to CITY for an extension to complete the work.

SECTION 5 REQUIREMENTS FOR RETROFITS

GENERAL BACKFLOW PREVENTION REQUIREMENTS

As a general rule, backflow prevention assembly installations shall be per the requirements in this policy and CITY's Backflow Prevention Installation Requirements and Standards. This section covers only items which may be exceptions to these standards or requirements set forth in Section 3, General Backflow Prevention Requirements.

If, in the original utility plans for the project, a backflow prevention assembly was called for but not installed, the backflow prevention assembly as called for on the utility plans shall be installed unless otherwise determined by CITY.

EXISTING BACKFLOW PREVENTION ASSEMBLIES

Regarding any presently existing backflow prevention assembly which was a USC approved assembly at the time of installation but is not currently on the USC Approved Assemblies list:

If the assembly passes the annual AWWA standard functional test; has been maintained and/or repaired to meet original factory working conditions; and is commensurate with CITY's assessed degree of hazard, the assembly will be accepted as an approved assembly for service protection.

INSTALLATION LOCATION

SPECIAL CIRCUMSTANCES

The backflow prevention assembly for all water services to a premise shall be installed at the meter or point of connection to CITY's main if any of the following apply:

1. A water customer's premise has internal cross-connections that cannot be permanently corrected or controlled.
2. A water customer's premise has intricate internal plumbing and piping.
3. The water service laterals between the point of connection and the water use cannot be located or defined to the satisfaction of CITY.
4. Any conditions listed in the section General Backflow Prevention Requirements, Installation Location, Special Circumstances apply.

DOMESTIC SERVICES

Backflow prevention shall be as close as possible to the meter.

CITY may consider allowing the backflow prevention assembly to be located internally at the water riser if physical space is limited for an exterior installation, if proof is provided through a Cross-Connection Survey that no lateral taps exist prior to the proposed installation location inside the building, and if all requirements are met for an internal installation including sufficient access to the assembly for testing and maintenance purposes.

IRRIGATION SERVICES

Backflow prevention shall be immediately downstream of the meter. Installations shall be per the CITY Backflow Prevention Standards and this policy.

FIRE SERVICES

Backflow prevention shall be located at the point of connection. If the assembly is a double check it shall be located in a vault just inside the curb/sidewalk; if the assembly is an RP it shall be located in a heated enclosure just inside the curb/sidewalk. The fire hydrants, number of fire risers, and the fire department pumper connection will be a consideration during placement of the backflow prevention assembly.

CITY may consider allowing the backflow prevention assembly to be located internally at the fire system riser if physical space is limited for an exterior installation, if proof is provided through a Cross-Connection Survey that no lateral taps exist prior to the proposed installation location inside the building, and if all requirements are met for an internal installation including sufficient access to the assembly for testing and maintenance purposes

TYPES AND METHODS OF BACKFLOW PREVENTION

DOMESTIC SERVICES

Double Check Valve In Lieu Of Reduced Pressure Principle Assembly – With approval from CITY, a DC may be used in lieu of an RP. In addition, the DC requires a minimum of annual testing and a possible higher level of testing as directed by CITY. This substitution may be considered for retrofit situations only under the following exclusive conditions:

1. Where retrofit of an RP induces pressure losses which render the existing domestic system inoperable and there is not space for installation of a pump. The owner of the domestic system shall submit to CITY photos, sketches, calculations and a detailed flow and pressure report to substantiate this claim. The calculations and report shall be provided by a licensed plumber or engineer. CITY reserves the right to inspect the premises to verify the constraints.
2. Where safety or drainage problems exist with the installation of an RP which cannot be reasonably corrected. The owner of the system shall provide a written report which details the problems or logistics of installing the RP.

IRRIGATION SERVICES

Stop and Waste Valves – NAC 445A.67255 specifically defines stop and waste valves as a potential source of contamination to a distribution system and prohibits their use upstream of a backflow prevention assembly. Any existing irrigation system with a stop and waste valve between the meter (or point of connection) and the backflow prevention assembly shall be changed to meet current CITY Backflow Prevention Standards as a requirement for continued water service.

Double Check Valve – CITY may accept the use of the existing double check (DC) as system protection if it can be demonstrated that:

1. The DC passes the periodic functional test;
2. The DC is installed correctly including the proper shut-off and drain system; and
3. No stop and waste valve is installed upstream of the DC.

At the time that a DC no longer passes the test, it shall be replaced with an assembly currently approved for service protection.

FIRE SYSTEM BACKFLOW PREVENTION OPTIONS

1. No Backflow Prevention Assembly. CITY specifies that all fire services be equipped with backflow prevention assemblies consistent with NAC 445A. Based upon the water quality data presented in The Foundation study and the potential acute and chronic health effects associated with backflow from fire sprinkler systems, the "no backflow prevention option" is not an option.
2. Installation of Required Backflow Prevention. This shall be per the requirements listed in the section titled General Backflow Prevention Requirements.
3. Delayed Installation of Double Check Valves. In situations where the retrofit is extremely difficult due to space limitations or where the backflow prevention assembly adversely affects sprinkler system operation, CITY will consider an extended installation schedule under the following conditions:
   a. The existing system is equipped with at least a non-testable single check valve.
   b. The owner of the system shall submit a report prepared by a licensed fire contractor or engineer which adequately describes the space or hydraulic problems and provides the flow and pressure requirements of the jurisdictional fire agency.
   c. The owner of the premise consents to a prescribed plan and schedule for eventual retrofit of the fire sprinkler system with a double check valve assembly and a tank-pump installation, if necessary, for pressure and flow. Such plan and schedule shall be with the approval of the appropriate Health Department and the jurisdictional fire agency.
4. Double Check Valve in lieu of Reduced Pressure Principle Assembly. With approval from CITY, and the jurisdictional fire agency, a DC may be used in lieu of an RP on certain NFPA Class 4, 5 & 6 fire sprinkler systems. All requirements noted above in the section titled Reduced Level of Service Protection shall be met by the water customer. In addition, the DC requires a minimum of semi- annual testing and a possible higher level of testing as directed by CITY. This substitution may be considered for retrofit situations only under the following exclusive conditions:
   a. Where retrofit of an RP induces pressure losses which render the existing fire system inoperable and there is not space for installation of a pump. The owner of the fire system shall submit to CITY photos, sketches, calculations and a detailed flow and pressure report to substantiate this claim. The calculations and report shall be provided by a licensed fire contractor or engineer. A letter from the jurisdictional fire agency listing required pressures and flows shall be provided to CITY.
   b. Where safety or drainage problems exist with the installation of an RP which cannot be reasonably corrected, the owner of the system shall provide a written report which details the problems or logistics of installing the RP.

SECTION 6 CONSTRUCTION WATER & FIRE HYDRANT USAGE

Any entity that uses water from a private or public fire hydrant or other water outlet shall:

1. Have written approval from CITY for use of water from this non metered supply.
2. Have the Air Gap Separation on those vehicles and equipment approved by CITY before water fill.

SECTION 7 CERTIFIED BACKFLOW ASSEMBLY TESTERS

TESTER CERTIFICATION

Persons performing tests on backflow prevention assemblies in Nevada shall have a current CA-NV AWWA Backflow Prevention Assembly Tester Certification pursuant to NAC 445A.

TESTER RESPONSIBILITIES AND TESTING REQUIREMENTS

1. A successful, operational function test by a certified tester shall be completed and submitted to CITY within seven (7) days after the assembly is installed and water service is set and/or water service is established. Water service will be terminated after the meter is set if this requirement is not met.
2. Any tester who conducts tests of backflow prevention assemblies which protect fire service connections shall also be a Nevada licensed fire contractor or work under the direct supervision of a licensed fire contractor.
3. CITY may request the tester perform the test in the presence of a CITY Public Works employee.
4. CITY may conduct periodic spot checks of a tester's work using the tester's own gauge.
5. NAC 445A.67245 requires all test gauges to be calibrated at least annually by a qualified firm capable of such calibration. The calibration certification forms shall be provided to CITY.
6. Both backflow prevention assemblies on a Detector Check assembly shall be tested. Designate the test for the bypass assembly as such on the test form. Read the bypass meter and record it on the test form.
7. Place in the comment field any items such as and including:
   a. An incorrectly installed assembly (per CITY Installation Standards)
   b. An assembly which has been modified from the original factory configuration such as having a #1 shut-off valve without a test cock or one in which a shut-off valve has been detached from the body of the backflow assembly.
   c. An installation which has a stop and waste valve between the meter and the assembly
   d. An installation which has a water outlet, tap, tee, etc., upstream of the backflow prevention assembly
   e. Use of a test cock for water supply
   f. A fire service which has a tap for non-fire services upstream or downstream of the backflow prevention assembly
8. Test criteria for a passing test for an RP:
   a. Minimum 2.0 pounds per square inch differential (PSID) on relief valve opening
   b. Minimum 1.0 PSID on check valve #1
   c. Minimum 3.0 PSID buffer between relief valve opening and check valve #1
   d. Both shut-off valves shall not leak
9. Test criteria for a passing test for a DC:
   a. Minimum 1.0 PSID on check valve #1 and check valve #2
   b. Both shut-off valves shall not leak
10. Test criteria for a passing test for a PVB:
    a. The air inlet shall open at a minimum 1.0 PSID
    b. Minimum 1.0 PSID on check valve #1
    c. Both shut-off valves shall not leak

SECTION 8 CROSS-CONNECTION CONTROL SPECIALISTS

SPECIALIST CERTIFICATION

Any person who wishes to conduct Cross-Connection Surveys for CITY customers shall be a Cross-Connection Control Specialist ("Certified Specialist"). This certification shall be obtained through the CA-NV AWWA.

SECTION 9 ENFORCEMENT ACTION

GENERAL

If, in the opinion of CITY, it is found that a customer is not meeting its responsibilities relative to service protection backflow prevention, CITY may implement enforcement actions. Enforcement may include:

1. Denying or terminating water service to a customer's premise.
2. Other action as CITY may deem necessary to eliminate existing or likely backflow conditions.

BASIS FOR WATER SERVICE TERMINATION

When CITY encounters a water use that represents a clear and immediate hazard to the potable water supply that cannot be immediately abated, CITY will institute a procedure for discontinuing the water service. Conditions or water uses that create a basis for water service termination shall include, but are not limited to, the following:

A. Direct or indirect cross-connection between CITY's water system and a sewer line.
B. Unprotected direct or indirect connection between the public water system and an unapproved auxiliary water system or source.
C. Any other condition which in CITY's judgment constitutes an immediate source of contamination to CITY's system.
D. Refusal to install a required backflow prevention assembly. Unapproved delays by the customer to install backflow prevention assemblies shall constitute such a refusal.
E. Refusal or unapproved delay to test a backflow prevention assembly.
F. Refusal or unapproved delay to repair a faulty backflow prevention assembly.
G. Refusal or unapproved delay to replace a faulty backflow prevention assembly.
H. Unprotected direct or indirect connection between the public water system and a system or equipment containing contaminants.
I. If a backflow prevention assembly has been removed, bypassed or disabled without prior approval from CITY's Public Works Department.
J. If a cross-connection exists that is not controlled commensurate to the degree of hazard as assessed by CITY's Public Works Department.

TERMINATION PROCEDURE

In the case of A, B, or C water service to a customer's premise will be terminated immediately if a potential hazard to the potable water supply is determined and cannot be immediately abated.

For all other conditions, CITY will terminate service to a customer's premise after the listed in steps 1 through 4 below have been completed.

1. **Courtesy Notice;** CITY shall notify the customer (by mail approx. 30 days before the testing month) of the requirements related to backflow prevention (installation, maintenance, relocation, testing, etc.). The customer shall be given the full testing month (determined by prior years testing, exception: new installation), to comply and have their passing testing results submitted to the CITY.
2. **Overdue Notice;** CITY shall send a second notice to the customer (by mail the first working day after the testing month) who does not provide testing results within the designated testing month. The second notice shall allow the month following their testing month as a grace period to comply before receiving the shut-off notice.

SECTION 10 PROCEDURE FOR A BACKFLOW OR CROSS-CONNECTION INCIDENT

GENERAL

Whenever backflow occurs (either from backpressure or backsiphonage) the potential exists for contamination of CITY's distribution system. Backflow incidents may be confined on site to a particular premise or may be more widespread in the event of sudden pressure loss in CITY's distribution system. The following procedures shall be used for responding to backflow incidents:

BACKFLOW EVENT CONFINED TO A PARTICULAR PREMISE OR PROPERTY

This type of backflow event will be communicated to the Bureau of Safe Drinking Water and CITY. The following will be the procedure followed by CITY for an event isolated to a single property.

1. CITY will notify the appropriate health department of the event and the nature of the event. Based upon the particular circumstances and with consultation with the Bureau of Safe Drinking Water, CITY may immediately implement one or more of the following actions: water quality testing, flushing of services and mains, and/or boil water order to customers or areas of the system affected by the event. Water service may be terminated to the premise suspected of being the source of the backflow until corrective actions are completed.
2. The owner of the premise allowing (or suspected of allowing) the backflow to occur shall be required to install or repair and test backflow prevention equipment on the water service. Backflow prevention measures will be specified by CITY. Such backflow prevention equipment will be installed and tested before service is restored.
3. CITY will require the owner of the premise to complete a detailed cross-connection control survey of the premise by a Certified Specialist. CITY and the Bureau of Safe Drinking Water will determine the scope of the survey and will utilize the survey to determine additional internal backflow prevention measures required of the affected premise.

BACKFLOW EVENT CAUSED BY A SYSTEM LOSS OF PRESSURE

1. CITY will determine the extent of the incident and notify the Bureau of Safe Drinking Water as soon as possible. After consultation with the Bureau of Safe Drinking Water, a boil water order may be issued by CITY to the media or door to door identifying the area affected by the event and those customers which should immediately boil their domestic water.
2. CITY will isolate the area affected by the backflow event and will notify the jurisdictional fire department of curtailment of fire protection service to the affected area. CITY will continue to communicate with affected customers through use of the media, direct contact, telephone, door hangers and/or other methods.
3. Immediately after isolating the area affected by the backflow event, CITY will initiate corrective action to restore service. This will include system repairs, flushing of mains and services and water quality sampling and monitoring.
4. After service is restored (mains and services are fully pressurized and flushed), the boil water order will be lifted upon receiving satisfactory results from water quality testing.

3. **7 DAY NOTICE WATER SHUT-OFF;** CITY shall provide a third notice directly to the premises which will be a Disconnect Notice to be carried out within 7 days. Non-compliance fees may be applied to this notice as determined by CITY's Rules and Rates.

4. **TERMINATION OF SERVICE;** CITY will terminate water supply and lock the service valve. The water service will remain inactive until all violations have been corrected, inspected and approved by CITY and any applicable re-connect charges have been collected in accordance with CITY's Rules and Rates.

5. **Failed Test Reports;** CITY shall notify customers via mail of a failed test report. Repairs are required to be made within seven (7) days of a failed report if a location is determined to have the potential for a cross-connection health hazard. Otherwise the same time frame as not receiving the test results will be allowed following steps 2-4. If the passing test report is not received within the time frame allocated the location will have services discontinued.